1. Determine the domain of the function below.

$$f(x) = \frac{6}{30x^2 - 7x - 15}$$
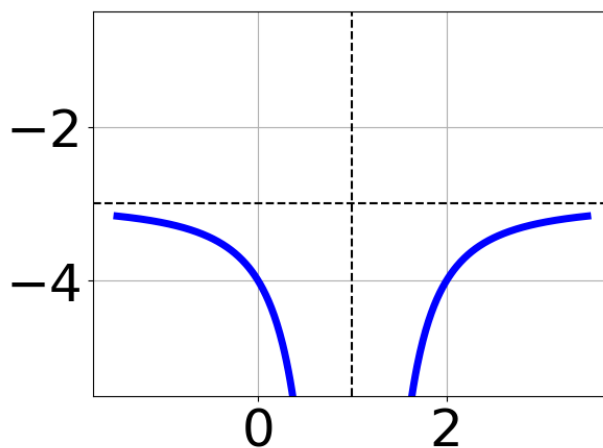
  A. All Real numbers.

  B. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.42, -0.37]$ and $b \in [0.6, 1.37]$

  C. All Real numbers except $x = a$, where $a \in [-1.42, -0.37]$

  D. All Real numbers except $x = a$ and $x = b$, where $a \in [-16.01, -14.82]$ and $b \in [29.58, 30.49]$

  E. All Real numbers except $x = a$, where $a \in [-16.01, -14.82]$

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2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-63}{-35x + 14} + 1 = \frac{-63}{-35x + 14}$$

  A. $x_1 \in [-0.3, 1]$ and $x_2 \in [-3.6, 1.4]$

  B. $x_1 \in [-0.8, 0]$ and $x_2 \in [-3.6, 1.4]$

  C. All solutions lead to invalid or complex values in the equation.
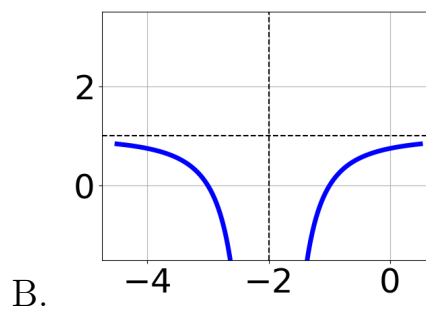
  D. $x \in [0.4, 1.4]$

  E. $x \in [-0.8, 0]$
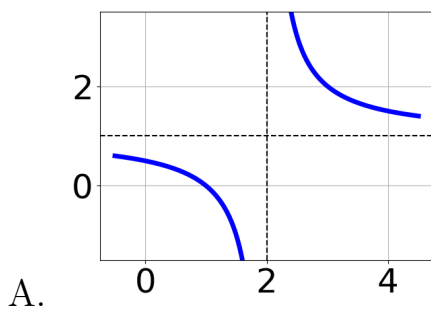

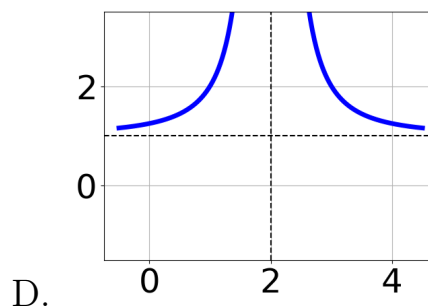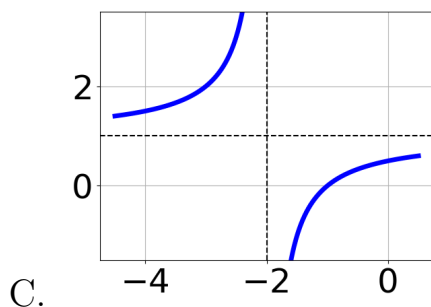3. Choose the equation of the function graphed below.

A. $f(x) = \dfrac{-1}{x+1} + 4$

B. $f(x) = \dfrac{-1}{(x+1)^2} + 4$

C. $f(x) = \dfrac{1}{x-1} + 4$

D. $f(x) = \dfrac{1}{(x-1)^2} + 4$

E. None of the above

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4. Choose the graph of the equation below.

$$f(x) = \frac{1}{x-2} + 1$$

A.

B.

C.   D.

E. None of the above.

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5. Determine the domain of the function below.

$$f(x) = \frac{6}{15x^2 - 38x + 24}$$

A. All Real numbers except $x = a$, where $a \in [11.98, 12.15]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b$, where $a \in [11.98, 12.15]$ and $b \in [29.98, 30.12]$

D. All Real numbers except $x = a$, where $a \in [1.2, 1.24]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [1.2, 1.24]$ and $b \in [1.31, 1.43]$
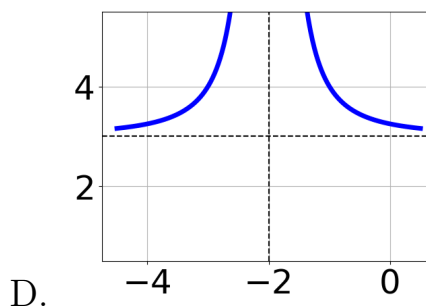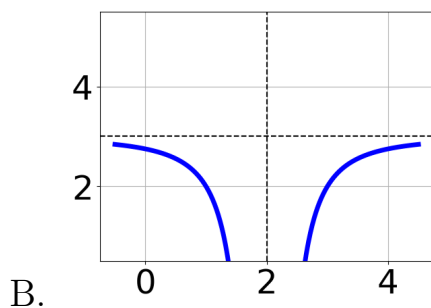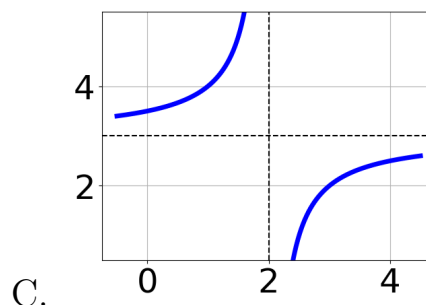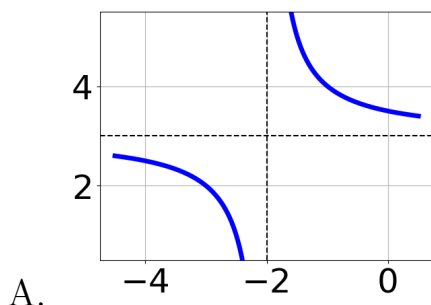
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6. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-8}{-5x + 2} + -9 = \frac{-9}{-45x + 18}$$

A. $x \in [-1.44, 1.56]$

B. $x_1 \in [0.23, 0.43]$ and $x_2 \in [-0.44, 3.56]$

C. All solutions lead to invalid or complex values in the equation.

D. $x \in [-0.37, -0.15]$

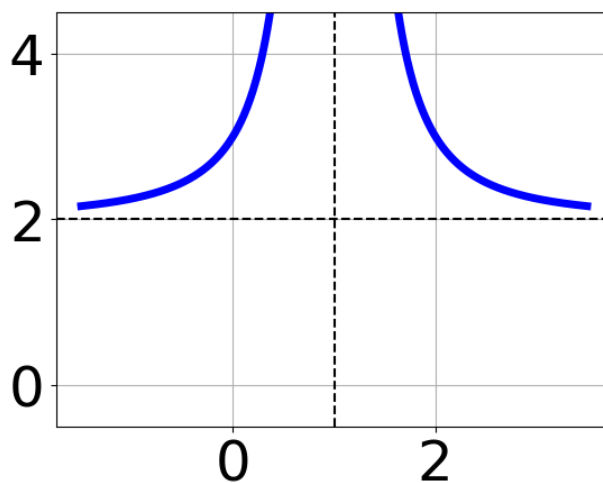E. $x_1 \in [-0.37, -0.15]$ and $x_2 \in [-0.44, 3.56]$

7. Choose the graph of the equation below.

$$f(x) = \frac{1}{x+2} + 3$$

A.

C.

B.

D.

E. None of the above.

8. Choose the equation of the function graphed below.

A. $f(x) = \dfrac{-1}{x-1} + 0$

B. $f(x) = \dfrac{1}{x+1} + 0$

C. $f(x) = \dfrac{-1}{(x-1)^2} + 0$

D. $f(x) = \dfrac{1}{(x+1)^2} + 0$

E. None of the above

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9. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-7x}{2x-7} + \frac{-7x^2}{10x^2 - 39x + 14} = \frac{-4}{5x-2}$$

A. $x \in [-0.24, 0.83]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [2.32, 5.4]$ and $x_2 \in [-0.04, 0.83]$

D. $x_1 \in [0.7, 2.1]$ and $x_2 \in [-0.72, 0.38]$

E. $x \in [2.32, 5.4]$

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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6x}{-5x+4} + \frac{-4x^2}{-20x^2 - 4x + 16} = \frac{-2}{4x+4}$$

A. $x_1 \in [-0.08, 0.53]$ and $x_2 \in [-1.2, 6.8]$

B. $x \in [-1.06, -0.81]$

C. All solutions lead to invalid or complex values in the equation.

D. $x \in [-1.47, -1.3]$

E. $x_1 \in [-0.08, 0.53]$ and $x_2 \in [-1.42, 0.58]$